UNITED STATES PATENT AND TRADEMARK OFFICE

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10/648,012	08/26/2003	C. Earl Woolfork		3337

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ART UNIT	PAPER NUMBER
2644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/648,012	WOOLFORK, C. EARL
	Examiner	Art Unit	
	Andrew Graham	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2004*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Remarks/Amendment

1. Applicant's arguments filed October 25, 2004 that pertain to the concurrently submitted amendments have been fully considered but they are not persuasive in terms of the non-introduction of new matter.

The remarks state that the Bluetooth protocol was described, but not identified by name (page 13, lines 12-13). The remarks then denote six criterion as 'key Bluetooth specifications' (page 13, lines 13-18). Based on these specifications, which are stated to have been included in the initial patent application and present, continuation-in-part application, the applicant submits that the amendment does not introduce new matter (page 13, lines 2-3 and 19-20).

However, the examiner respectfully submits that the relationship between the applicant's disclosure(s) and the Bluetooth protocol are not mutually inclusive. In other words, properties included in the applicant's specification are paralleled in the properties of the Bluetooth protocol, but the Bluetooth protocol includes other properties that are not addressed by the applicant's specification. As such, to amended the application to state that the transmitter involved a "BLUETOOTH compliant transmitter" (see Claim 1 and paragraph 0008) means that the now-claimed transmitted involves all of the requirements for the transmitter that are defined in the Bluetooth protocol. Certain ones of these requirements for a transmitter were not addressed by the applicant's original or CIP disclosures. As the

amendment suggests that these certain requirements are included, such an amendment is considered to introduce new matter. For example, the Bluetooth protocol requires that the transmitted initial center frequency be ±75 kHz from the ideal center frequency (F_c) and has a maximum drift rate of 400 Hz/µs, as is described, for example, on page 23 of Version 1.0 B of the Bluetooth Specification. Such requirements are not addressed by the applicant's initial or CIP disclosures, which causes the Bluetooth compliant transmitter of the present version of the disclosure/claims to incorporate new matter.

Also, the applicant's disclosure states that the transmitter is a differential phase shift key transmitter (page 4, lines 1-4 of the initial disclosure, application number 10/027391; the disclosure originally submitted with the present application does not discuss a shift keying). The Bluetooth standard, however, uses a Gaussian frequency shift keying (GFSK), as is defined on page 21 of the Version 1.0 B specification. Accordingly, the two systems utilize different shift keying schemes, and the system of the applicant appears to not be Bluetooth-based, in light of the disclosure of the initial application. As the GFSK is a requirement of the Bluetooth protocol and the disclosure of the present application (CIP) is at least silent to involved/any shift keying, the transmission scheme of the present application (CIP) at least cannot be described as "Bluetooth communication" because the CIP's initial disclosure does not include the necessary support.

Furthermore, the general recitation of "Bluetooth" is considered indefinite because it does not delimit a version number of the Bluetooth specification. Accordingly, the presently amended disclosure does not clearly delimit which version(s) of the Bluetooth specification, including future versions that have not been published, certain phrases such as "BLUETOOTH compliant" are intended to refer.

Specification

2. The amendment filed 10/25/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. As further discussed in the above paragraph, amended references to the Bluetooth protocol do not have support found in the initial disclosure of this CIP application. Such references, and other recitations of new matter, are required to be cancelled from the amended version of the disclosure, as follows:

- Page 3, lines 3-4, 6, 7, 10, 11-12: "BLUETOOTH compliant", made in references to the transmitter and receiver; as explained above, at least the modulation performed in a BLUETOOTH system is not supported by the original disclosure.

- Page 3, lines 4 and 13-14: "BLUETOOTH communication" made in reference to a transmitted signal and FAWM system; as explained above, at least the modulation performed in a BLUETOOTH system is not supported by the original disclosure

- Page 3, lines 5 and 25: "non-BLUETOOTH", made in reference to the jack; such a restriction on the nature of the jack is not clearly supported by the original disclosure

- Page 3, line 11: "as defined in the BLUETOOTH standard" imparts properties to the code not supported by the original disclosure

- Page 4, lines 2, 3, 15, 18, 24, and 25: "BLUETOOTH compliant" infers characteristics upon the transmitter, receiver, and other addressed components that were not described in the original disclosure

- Page 4, lines 3: "BLUETOOTH communication" imparts characteristics to the transmission not supported by the original disclosure

- Page 4, lines 4-5: "BLUETOOTH is a worldwide wireless standard. Detailed information regarding the standard is available on the web site www.bluetooth.com." includes information not found in the initial disclosure

- Page 4, line 11: "non-portable" imparts information not found in the initial disclosure

- Page 4, line 12: "infrared (IR)" imparts information not found in the initial disclosure, which cited 'radio' transmission

- Page 4, lines 12-13. "these systems operate with narrow beam width that requires a point-and-shoot style for reception" and "They" present information not found in the initial disclosure

- Page 4, lines 29 and 31 "per the BLUETOOTH standard" and "which adheres to the BLUETOOTH standard", made in reference to the transmission and receiver, conveys a relationship not presented in the initial disclosure

- Page 4, lines 9 and 30: "non-BLUETOOTH", made in reference to the jack

- Page 5, lines 1-2, 5, 24, 25, 27: "BLUETOOTH compliant", made in reference to the transmitter and receiver

- Page 5, lines 6-7: "BLUETOOTH communication" imparts characteristics to the transmission not supported by the original disclosure

- Page 5, lines 25-26: "that utilizes a CODEC and BLUETOOTH front end" is a property of the transmitter not disclosed or supported by the originally filed specification

- Page 5, line 26: "non-BLUETOOTH" conveys characteristics associated with the headphone jack not supported by the originally filed specification

- Page 6, line 1: "which adheres to the BLUETOOTH standard" imparts a characteristic to the modulated signal not supported by the originally filed specification

- Page 6, lines 2, 3, 6, 8, 11, 13, 14, 17, 20, 21, 24, 26, 28, 32, and 33: "BLUETOOTH compliant", as discussed above, is not a characteristic of the transmitter or receiver supported by the original disclosure

- Page 6, lines 4-5: "BLUETOOTH communication" is not a characteristic of the transmitted signal supported by the original disclosure

- Page 6, lines 7: "per the BLUETOOTH standard using a CODEC and BLUETOOTH front end" is not a type of digitization nor set of components supported for the transmitter of the original disclosure

- Page 6, lines 12-13: "as defined in the BLUETOOTH specification" conveys a set of characteristics to the spread spectrum modulation not supported in the original disclosure

- Page 6, line 14: "or the like", conveys analogous generators that were not clearly considered in the original disclosure as filed

- Page 6, line 19: "as defined in the BLUETOOTH standard" assesses particular characteristics to the 2.4 GHz spectrum usage that are not supported by the original disclosure

- Page 6, line 23: "per the BLUETOOTH specification" conveys a set of characteristics to the spread spectrum demodulation not supported in the original disclosure

- Page 6, line 25: "packet" asserts that the fuzzy logic may be used to increase the bit detection of the overall packet (which comprises the user code, along with other data). The originally filed disclosure only denotes the use of fuzzy logic with the user code. As such, optimizing the packet code

is considered to suggest enhancing more than just the user
code, which is unsubstantiated.

- Page 7, lines 1, 9, 18-19: "BLUETOOTH compliant" as discussed
  above, is not a characteristic of the transmitter or receiver
  supported by the original disclosure

- Page 7, lines 2 and 3: "as defined in the BLUETOOTH standard"
  conveys characteristics of the format and bit stream rate not
  supported by the original disclosure

- Page 7, line 4: the strikethrough of "user" suggests that code
  bits in each packet other than those related to the user code
  may be processed by the fuzzy logic detector, which is not
  supported by the original disclosure. The same objection
  applied to "packet code" in line 11, the strikethrough of
  "user" and addition of "packet" in line 14, the strikethough
  of "user" in line 20, and the lack of a "user" qualifier
  before the word "code" in lines 30 and 31.

- Page 8, line 18 and 27, "BLUETOOTH standard" imparts
  characteristics to the packet that were fully supported in the
  original disclosure

- Page 8, line 27, "BLUETOOTH compliant" imparts characteristics
  to the receiver was not fully supported in the original
  disclosure

Per MPEP 608.04, the applicant is required to cancel the new
matter in the reply to this Office action.

Drawings

3.   The drawings are objected to under 37 CFR 1.83(a). The
drawings must show every feature of the invention specified in the
claims. Therefore, each of the components recited in the claims, such
as the codec, Bluetooth front end, shift register generator, encoder,
decoder, modulator, demodulator, decoder, fuzzy logic system, as well
as the steps of the methods, such as the receiving of a BLUETOOTH
compliant packet, activating a fuzzy logic "if" rule, activating a
fuzzy logic "then" rule, and performing a defuzzifying operation must
be shown in the drawing or the feature(s) canceled from the claim(s).
No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are
required in reply to the Office action to avoid abandonment of the
application. Any amended replacement drawing sheet should include all
of the figures appearing on the immediate prior version of the sheet,
even if only one figure is being amended. The figure or figure number
of an amended drawing should not be labeled as "amended." If a drawing
figure is to be canceled, the appropriate figure must be removed from
the replacement sheet, and where necessary, the remaining figures must
be renumbered and appropriate changes made to the brief description of
the several views of the drawings for consistency. Additional
replacement sheets may be necessary to show the renumbering of the
remaining figures. Each drawing sheet submitted after the filing date
of an application must be labeled in the top margin as either
"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the

changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in

abeyance.

Claim Rejections - 35 USC § 112 - 1st paragraph

The following is a quotation of the first paragraph of 35 U.S.C.

112:

> The specification shall contain a written description of the invention, and
> of the manner and process of making and using it, in such full, clear,
> concise, and exact terms as to enable any person skilled in the art to
> which it pertains, or with which it is most nearly connected, to make and
> use the same and shall set forth the best mode contemplated by the inventor
> of carrying out his invention.

4.   **Claims 1-5** are rejected under 35 U.S.C. 112, first paragraph,

as failing to comply with the written description requirement. The

claim(s) contains subject matter which was not described in the

specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was

filed, had possession of the claimed invention. The grounds upon

which the following limitations are considered to involve new matter

is discussed in further detail above, in regards to the corresponding

matter found in the specification.

Claim 1 contains the following limitations which incorporate new

matter:

Line 2: "BLUETOOTH communication" suggests a form of transmission

not supported in the original disclosure

Lines 2, 6, and 9: "NON BLUETOOTH" imparts restrictions on the jack not provided for in the original disclosure

Lines 3, 4, 7, 8, 10, 14, 17, 18, 19, 20, 23, 24: "BLUETOOTH compliant" imparts requirements on the transmitter, headphone, packet, generator, modulator, transmission, and demodulator not provided for in the original disclosure

Lines 11 and 13: a "CODEC" is not clearly provided for in the original disclosure

Line 11: a "BLUETOOTH front end" is not clearly provided for in the original disclosure

Lines 12 and 21: "as defined in the BLUETOOTH standard" imparts a correlation not clearly denoted in the original disclosure

Claim 2 contains the following limitations which incorporate new matter:

Line 2: "BLUETOOTH compliant" imparts requirements on the headphone receiver not provided for in the original disclosure

Line 3: "BLUETOOTH compliant packet" imparts requirements upon the packet not supported in the original disclosure

Line 10: "for each bit energy in the packet code" involves executing the logic 'if' on each of the bits in the packet, instead of only the user code; the original disclosure only supports the execution of such a rule on the user code bits (paragraphs 0013-0016 of the original disclosure)

Lines 13-14: "on each received bit energy" involves executing the logic 'then' on each of the bits in the packet, instead of only the

user code; the original disclosure only supports the execution of such

a rule on the user code bits (paragraphs 0017-0018 of the original

disclosure)

Claim 3 contains the following limitations which incorporate new

matter:

Line 1: "BLUETOOTH compliant" imparts requirements on the

headphone receiver not provided for in the original disclosure

Line 4: "BLUETOOTH compliant packet" imparts requirements upon

the packet not supported in the original disclosure

Line 10: "for each bit energy in the packet code" involves

executing the logic 'if' on each of the bits in the packet, instead of

only the user code; the original disclosure only supports the

execution of such a rule on the user code bits (paragraphs 0013-0016

of the original disclosure)

Lines 13-14: "on each received bit energy" involves executing the

logic 'then' on each of the bits in the packet, instead of only the

user code; the original disclosure only supports the execution of such

a rule on the user code bits (paragraphs 0017-0018 of the original

disclosure)

Claim 4 contains the following limitations which incorporate new

matter:

Lines 1-2, 8, 12, 25 and 27: "BLUETOOTH communication" suggests a

form of transmission not supported in the original disclosure

Line 6: "non BLUETOOTH" imparts restrictions on the jack not

provided for in the original disclosure

Lines 3, 5, 19, 20, 21, 22, and 30: "BLUETOOTH compliant" imparts requirements on the transmitter, receiver, and spread spectrum signal not provided for in the original disclosure

Line 10: a "CODEC" is not clearly provided for in the original disclosure

Lines 10-11: a "BLUETOOTH front end" is not clearly provided for in the original disclosure

Lines 13, 14, 15, 16, 17, and 25: "BLUETOOTH standard", "adheres to the BLUETOOTH standard", and "as defined in the BLUETOOTH standard" imparts a correlation not clearly denoted in the original disclosure

Line 18: "less than approximately 30 feet" imparts a range not clearly denoted in the original disclosure

Claim 5 contains the following limitations which incorporate new matter:

Line 2: "BLUETOOTH compliant" imparts requirements on the receiver not provided for in the original disclosure

Line 4: "BLUETOOTH compliant packet" imparts requirements upon the packet not supported in the original disclosure

Line 10: "for each bit energy in the packet code" involves executing the logic 'if' on each of the bits in the packet, instead of only the user code; the original disclosure only supports the execution of such a rule on the user code bits (paragraphs 0013-0016 of the original disclosure)

Lines 13-14: "on each received bit energy" involves executing the logic 'then' on each of the bits in the packet, instead of only the

user code; the original disclosure only supports the execution of such

a rule on the user code bits (paragraphs 0017-0018 of the original

disclosure)

5. **Claims 4 and 5** are rejected under 35 U.S.C. 112, first

paragraph, as failing to comply with the enablement requirement. The

claim(s) contains subject matter which was not described in the

specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make

and/or use the invention.

Claim 4, lines 25-26 state "with an option to apply fuzzy logic

detection system". However, the details of how this system is made

"optionally applicable", such as the physical connections or

functional basis upon which the system is opted in or out of the

processing sequence, are not disclosed nor suggested by the original

disclosure.

Claim 4 also recites "BLUETOOTH standard convolutional encoding"

and "convolutional decoding of said BLUETOOTH communications signal as

defined in the BLUETOOTH standard" in lines 13 and 24-25. The

BLUETOOTH standard does not clearly disclose the concept of

"convolutional" encoding or decoding, as is conventionally understood

by the terminology. Accordingly, until further corrected or

clarified, such encoding and decoding per the BLUETOOTH standard is

considered not enabled.

Claim 5 is rejected due to its respective dependency upon Claim

4.

Claim Rejections - 35 USC § 112 - 2nd paragraph

The following is a quotation of the second paragraph of 35 U.S.C.

112:

> The specification shall conclude with one or more claims particularly
> pointing out and distinctly claiming the subject matter which the applicant
> regards as his invention.

6. **Claim 3** is rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly

claim the subject matter which applicant regards as the invention.

Claim 3 states that the receiver "possibly" has an additive fuzzy

logic detection system. The phrase "possibly" renders the claim

indefinite because it is unclear whether the limitations following the

phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the

basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

7. **Claims 1-5** are rejected under U.S.C. 103(a) as being

unpatentable over Mooney et al (US 20030045235) in view of Altstatt

(USPN 5771441) and Benthin et al (USPN 5790595). Hereafter, "Mooney

et al" will be referred to as "Mooney". "Benthin et al" will be

referred to as "Benthin". In this rejection, Mooney makes repeated

reference to the BLUETOOTH protocol of communication. To this end,

the Specification of the Bluetooth System, Version 1.0 B (hereafter,

"Bluetooth Specification") will on occasion be cited to illustrate

that certain explicit limitations of the claims are inherently

included in Mooney's reference to the BLUETOOTH protocol.

Mooney teaches a dongle for converting the headset jack of a

telephone into a wireless communication port for a BLUETOOTH-enabled

wireless headset.

Specifically regarding **Claim 1**, Mooney teaches:

A fuzzy audio wireless system for BLUETOOTH communication of an

audio signal (system and function of Figure 1; p. 0036)

from the non-BLUETOOTH analog headphone jack ("analog audio

jack", 252; p. 0036, 0047) connected to a BLUETOOTH compliant

transmitter (100, p.0041,0051)and

received by a BLUETOOTH compliant headphone receiver

(504)(p.0048)comprising:

a NON-BLUETOOTH compliant analog headphone jack ("analog audio

jack" of conventional telephone that does not have BLUETOOTH

installed; p. 0025, 0036) from an audio source (170) in communication

(signals received over 252) with said BLUETOOTH compliant transmitter

(100)(p.0047);

said BLUETOOTH compliant transmitter (100) converts an analog

audio signal (input from 252) from said existing non-BLUETOOTH analog

headphone jack (connection from 170 to 252) to a BLUETOOTH compliant

digital signal using a CODEC (204) and a BLUETOOTH front end (202)(p.

0044,0048,0053,0059)

at a signal rate of approximately 1.4 Mbps as defined in the

BLUETOOTH standard (inherent, enabling BLUETOOTH communication

involves adhering to BLUETOOTH required bit rate, 1 Mbps, as denoted

on page 44 of BLUETOOTH specification);

said CODEC (204) in communication with a shift register generator

(LFSR, part of BLUETOOTH front end 202) that is BLUETOOTH compliant to

create a unique user code (BLUETOOTH device address

BD_ADDR)(inherently part of BLUETOOTH front end 202; see pages 143-147

of BLUETOOTH specification regarding use of LFSR in generating

BD_ADDR)

said shift register generator (LFSR involved in generating

BD_ADDR) in communication with a spread spectrum modulator (circuitry

of 202 that generates and applies hopping sequence; hopping sequence

based on BD_ADDR of master, see page 43 of BLUETOOTH specification)

that is BLUETOOTH compliant (inherent, part of BLUETOOTH front end

202);

said BLUETOOTH compliant spread spectrum modulator (inherent,

circuitry that implements determined hop frequency, performs FM

modulation in 202, see page 41 of BLUETOOTH specification) in

communication with a transmit antenna (antenna, Figure 2 of Mooney)

for BLUETOOTH compliant transmission of a coded BLUETOOTH compliant

packet (output of 202, establishment of communication between 100 and

504, p. 0039; see also page 41 of BLUETOOTH specification for

modulation of packets)

to a receiving antenna (antenna on 504, Figure 1) at a radio

frequency of approximately 2.4 GHZ as defined in the BLUETOOTH

standard (inherent, BLUETOOTH communication in system of Mooney, see

page 43 of BLUETOOTH specification),

said receiving antenna (on 504, Figure 1) in communication with a

spread spectrum demodulator (inherently part of 504, frequency hop

transceiver involves FM modulation, and thus, inherently demodulation

from the hop frequency and GFSK based frequency deviations; see pages

41,44 of BLUETOOTH specification) that is BLUETOOTH compliant

(inherently compliant as it receives BLUETOOTH communication signal)

However, Mooney does not clearly specify:

- that the BLUETOOTH compliant transmitter is battery powered

- that the BLUETOOTH compliant headphone receiver is battery

   powered

- that the analog audio signal is an analog audio music signal

Altstatt teaches an audio dongle for an portable audio device

that utilizes a RF connection to interface a pair of wireless

headphones.

Specifically regarding Claim 1, Altstatt teaches:

the BLUETOOTH compliant transmitter is battery powered (col.

4, lines 36-39)

the BLUETOOTH compliant headphone receiver is battery powered

(inherent, headphones are wireless, col. 4, lines 48-67, but

require power for receiver circuitry, col. 8, lines 51-67; col.

9, lines 1-19)

the analog audio signal is an analog audio music signal (input

source 10 comprises radio, cassette player, CD player, col. 4,

lines 29-34)

To one of ordinary skill in the art at the time the invention was

made, it would have been obvious to modify the system of Mooney to

utilize battery powered components and connect to audio sources, as is

taught by Altstatt. The motivation behind the use of battery

components would have been the elimination of wires or external

connections for the provision of power to the transmitter, source, and

headset. The connection to audio sources, such as a portable radio or

cassette player, would have enabled the wireless headset of Mooney to

receive user-selected music, such as that prerecorded on a medium, for

enjoyment during exercising, rollerblading, and other physical

activities that involve a great deal of arm motion.

However, as part of this error correction encoding and decoding,

Mooney in view of Altstatt does not specify:

- the use of a convolutional encoder in communication with the

   CODEC

- the use of convolutional decoder in communication with the

   receiving antenna

- a fuzzy logic detection system for additional decoding

   performance in communication with the received, demodulated

   signal from the spread spectrum demodulator

Benthin teaches a method for reliably obtaining bit specific

information using soft data bits.

Specifically regarding Claim 1, Benthin teaches:

the use of a convolutional encoder (Viterbi decoding may be

used, per col. 5, lines 34-39, which inherently involves Viterbi

encoding of data groups in the channel; col. 1, lines 10-18; col.

5, lines 60-65) in communication with the CODEC (encoder as part

of front end 202, in communication with 204 in system of Mooney)

the use of convolutional decoder (Viterbi decoder, col. 5,

lines 34-39 in view of decoding in receive path of Mooney, as

illustrated in Figure 8.4 of BLUETOOTH specification) in

communication with the receiving antenna (10)(col. 1, lines 61-

63).

a fuzzy logic detection system (implemented in 12, determines

soft data bits)(Figure 1, function of Figure 2) for additional

decoding performance in communication with the received,

demodulated signal (output of 11) from the spread spectrum

demodulator (11)(col. 2, lines 6-31 col. 5, lines 10-25)

To one of ordinary skill in the art at the time the invention was

made, it would have been obvious to implement the convolutional

encoding scheme as well as the soft decision relevant components of

Benethin as part of the encoding and signal reception parts of the

system of Mooney in view of Altstatt. The motivation behind such a

modification would have been that convolutional encoding is well known

in the art to perform well under high error conditions and is often

inexpensive to implement. The soft bit determining circuitry would

have improved the reliability of the decision relating to the hard

data bit equivalents of the received information, as is taught by

Benthin.

Regarding **Claim 2**, Mooney in view of Altstatt and Benthin

particularly discloses:

said battery powered BLUETOOTH compliant headphone receiver (504

of Mooney, in view of 14 of Alstatt) having said fuzzy logic detection

system (12 of Benthin) with a detection method, comprising the steps

of:

a) receiving (step 1) a BLUETOOTH compliant packet code bits

having all bits that make up the packet code (col. 1, lines 61-67;

col. 2, lines 1-17);

b) activating a fuzzy logic if rule for each bit energy in the

packet code (aspect of step 2, determination of probability value for

each symbol, each symbol represents a group of bits, which involves

received energy; col. 2, lines 18-65; col. 3, lines 1-16 of Benthin)

c) activating a fuzzy then rule indirectly dependent on each

received energy bit (determining of a posteriori probability, step 3,

col. 3, lines 17-65 of Benthin); and

d) performing a defuzzifying fuzzy logic operation to relate the

bit energy to one of a digital one (1) and digital zero(0) bit

representation (col. 5, lines 22-49 of Benthin).

Regarding **Claim 3**, please refer above to the rejection of the similar limitations of Claim 2, noting that the derivation of a posteriori probabilities in Benthin involve summation, which equates to "additive".

Regarding **Claim 4**, Mooney in view of Alstatt and Benthin teaches:

A method for battery powered wireless BLUETOOTH communication transmission and reception of high fidelity audio music (from 10 of Alstatt) between a battery operated BLUETOOTH compliant transmitter (14 of Altstatt in view of 100 of Mooney) and a battery operated BLUETOOTH compliant receiver headphone (504 of Mooney in view of 16 of Altstatt) (para. 0027 of Mooney, in view of col. 4, lines 29-53 of Altstatt) comprising the step of:

connecting the plug (18 of Alstatt) attached to said battery operated BLUETOOTH compliant transmitter (14 of Altstatt in view of communication scheme of Mooney) to the existing non-BLUETOOTH compliant analog headphone jack (12) of an audio music source (10, of Altstatt)(col. 4, lines 36-39);

converting an a music audio signal (from 10 of Altstatt) to a BLUETOOTH communication signal using a CODEC (204) and A BLUETOOTH front end (202)(para. 0047-0048, Figure 2);

encoding the BLUETOOTH communication signal using BLUETOOTH standard convolutional encoding creating a BLUETOOTH standard spread spectrum signal using a shift register generator to modulate a unique user code that adheres to the BLUETOOTH standard (inherent, operation of BLUETOOTH front end; para. 0048,0051);

transmitting said BLUETOOTH standard spread spectrum signal at a
radio frequency of approximately 2.4 GHZ at a power level that adheres
to the BLUETOOTH standard (inherent, defined in BLUETOOTH
specification for BLUETOOTH front end 202 of Mooney)

for reception at a distance less than approximately 30 feet from
said battery operated BLUETOOTH compliant transmitter (Altstatt
requires 3 ft, col. 6, lines 41-46);

receiving said BLUETOOTH compliant spread spectrum signal at said
battery operated BLUETOOTH compliant receiver headphones (inherent,
reception of BLUETOOTH signal, para. 0017,0021 of Mooney);

demodulating said BLUETOOTH compliant spread spectrum signal
(inherent, part of BLUETOOTH communication implemented by Mooney)

convolutional decoding of said BLUETOOTH communication signal as
defined in the BLUETOOTH standard (inherent, part of BLUETOOTH
communication of 504 implemented by Mooney, in view of Vitterbi
decoding of Benthin, col. 5, lines 34-39)

with an option to apply fuzzy logic detection system to enhance
bit detection performance (processing of BLUETOOTH communication
signal payload is optional, depending on packet type and enabled mode,
as defined by BLUETOOTH specification, part of BLUETOOTH communication
implemented by Mooney, page 86 of BLUETOOTH spec; Benthin teaches soft
decision for bits, col. 5, lines 10-49)

converting said BLUETOOTH communication signal back to said
analog music audio signal (inherent, output of digital payload of
Mooney into headset 504, para. 0048) and communicating said analog

music audio signal to a headphone speaker (such as 26,28 of Alstatt)

within the BLUETOOTH compliant headphone receiver (504 of Mooney,

para. 0039, in view of 20 of Alstatt, col. 4, lines 48-51)

Regarding **Claim 5**, please refer above to the rejection of the

similar limitations of Claim 2.

Conclusion

Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Andrew Graham

whose telephone number is 703-308-6729. The examiner can normally be

reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful,

the examiner's supervisor, Sinh Tran can be reached at 571-272-7564.

The fax phone number for the organization where this application or

proceeding is assigned is 703-872-9306.

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direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-

9197 (toll-free).

SINH TRAN
SUPERVISORY PATENT EXAMINER

Ag

Andrew Graham
Examiner
A.U. 2644

ag
May 11, 2005